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# The Dermatology Lexicon Project (DLP)

Hintz Glen

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### MISSION

The creation of a universally accepted and comprehensive **dermatology terminology** to support dermatology research, medical informatics and clinical care with a blueprint for sustainability.



Dermatology Lexicon Project © University of Rochester 2005

#### TERM DATABASE

Locate and view dermatology **diagnostic concepts** using a partial or complete word search. Enter your term into the entry window and a single diagnosis or list of diagnoses will be returned. Select the diagnosis and view its placement in a pathophysiology hierarchy.





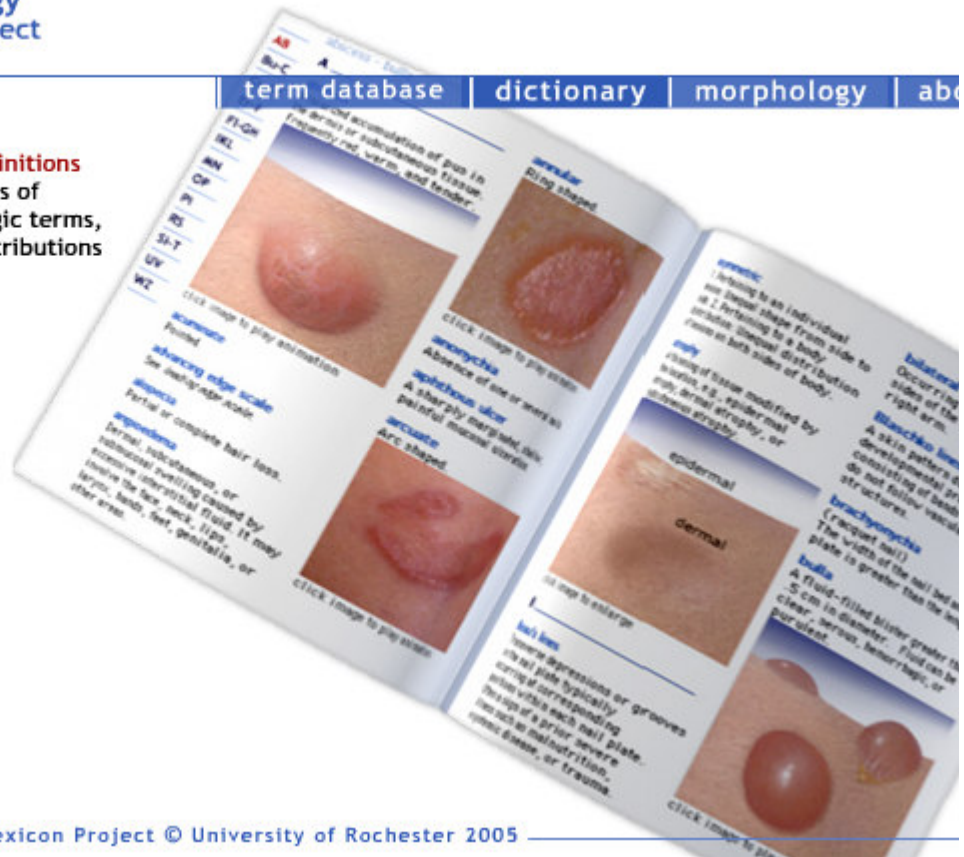
## Search the DLP

[Download the DLP](#)

options: ☒ Partial match ☐ Exact match ☐ by ID

## DICTIONARY

Use this section for **definitions** of the descriptive words of dermatology morphologic terms, configurations, and distributions in dermatology.



abscess - bulla

**AB****Bu-C****Cy-DE****Er-F****FI-GH****IKL****MN****OP****Pi****RS****Si-T****UV****WZ****A** \_\_\_\_\_**abscess**

A localized accumulation of pus in the dermis or subcutaneous tissue. Frequently red, warm, and tender.



click image to play animation

**acuminate**

Pointed.

**advancing edge scale**

See *leading edge scale*.

**alopecia**

Partial or complete hair loss.

**angioedema**

Dermal, subcutaneous, or submucosal swelling caused by excessive interstitial fluid. It may involve the face, neck, lips, larynx, hands, feet, genitalia, or other areas.

**annular**

Ring shaped.



click image to play animation

**anonychia**

Absence of one or several nails.

**aphthous ulcer**

A sharply marginated, shallow, painful mucosal ulceration.

**arcuate**

Arc shaped.



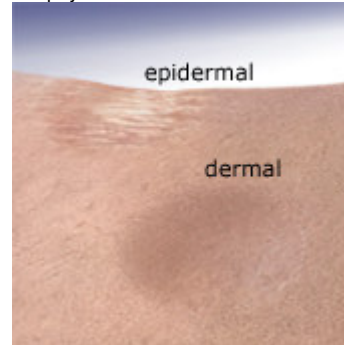
click image to play animation

**asymmetric**

1. Pertaining to an individual lesion: Unequal shape from side to side. 2. Pertaining to a body distribution: Unequal distribution of lesions on both sides of body.

**atrophy**

A thinning of tissue modified by the location, e.g., epidermal atrophy, dermal atrophy, or subcutaneous atrophy.



click image to enlarge

**B** \_\_\_\_\_**Beau's lines**

Transverse depressions or grooves in the nail plate typically occurring at corresponding positions within each nail plate. Often a sign of a prior severe illness such as malnutrition, a systemic disease, or trauma.

**bilateral**

Occurring or appearing on both sides of the body, e.g., lesions on the right arm.

**Blaschko lines**

A skin pattern due to processes usually following the lines of Blaschko or whorls that do not follow neural structures.

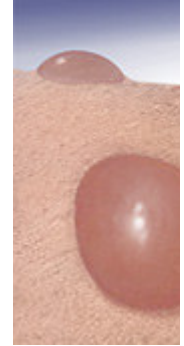
**brachyonychia**

(racquet nail)

The width of the nail plate is greater than the

**bulla**

A fluid-filled blister in diameter. Fluid is serous, hemorrhagic, or purulent.



click image to play animation



## burrow - crust

[AB](#)[Bu-C](#)[Cy-DE](#)[Er-F](#)[Fl-GH](#)[IKL](#)[MN](#)[OP](#)[Pi](#)[RS](#)[Si-T](#)[UV](#)[WZ](#)**burrow**

A thread-like linear or serpiginous tunnel in the skin typically made by a parasite.



[click image to enlarge](#)

**C****café au lait patch**

A well circumscribed macule or patch varying from pale brown in lighter skin to dark brown in darker skin patients. The macule or patch may have a serrated or irregular margin.

**callus**

Thickened stratum corneum localized to pressure areas.

**carbuncle**

An inflammatory nodule composed of coalescing furuncles.

**cellulite**

Fat and fibrous tissue deposits usually around the thighs and buttocks that result in dimpling of the skin.

**cerebriform**

Resembling the convolutions of the brain surface.

**chromonychia**

An abnormality in color the nail unit and nail plate.

**circinate**

Circular or ring-like in shape.

**clubbing**

(Hippocratic fingers, watch-glass nails, drumstick fingers)

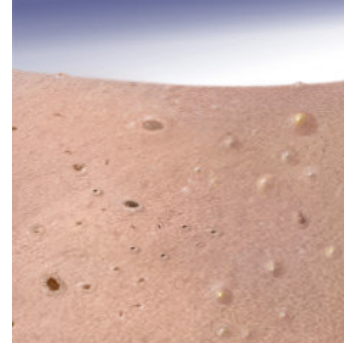
Transverse and longitudinal over-curvature of the nail plate. The distal digit may have associated enlargement. Lovibond's angle is greater than 180 degrees.

**collarette scale**

Fine, peripherally attached and centrally detached scale at the edge of an inflammatory lesion.

**comedo**

An enlarged hair follicle infundibulum, primarily containing keratin and lipids, with a plugged dilated follicular opening (blackhead) or a clinically inapparent follicular opening (whitehead).



[click image to enlarge](#)

**coup de sabre**

From the French meaning blow of the sword. A vertically oriented depression of the skin (and at times underlying bone) on the forehead typically associated with morphea.

**craquelé**

Fine fissures and cracks in the skin.

**crateriform**

A bowl shaped cav

**crescentic**

See *arcuate*.

**cribriform scarr**

A type of scar with indentations or per

**crust**

A hardened layer of serum, blood, or pus dries on the skin surface. Crusts can be thin or thick and various colors. Crusts are formed from dried purulent exudate, or formed by blood.



[click image to enlarge](#)

cyst - eponychium

[AB](#)[Bu-C](#)[Cy-DE](#)[Er-F](#)[FI-GH](#)[IKL](#)[MN](#)[OP](#)[Pi](#)[RS](#)[Si-T](#)[UV](#)[WZ](#)**cyst**

A closed cavity or sac containing fluid or semisolid material. A cyst may have an epithelial or endothelial lining.



[click image to play animation](#)

**D****delled**

See *umbilicated*.

**demarcated, poorly**

The boundary or limits of a lesion are poorly marked.

**demarcated, well**

The boundary or limits of a lesion are clearly defined.

**denuded**

A loss of an external layer such as the entire epidermis.

**depigmented**

Loss or absence of skin pigmentation.

**dermal**

Relating to the layer of skin below the epidermis, but above the panniculus, consisting of papillary and reticular layers and containing blood and lymphatic vessels.

**dermatomal**

Pertaining to an unilateral area on the surface of the body that is innervated by afferent fibers of one spinal root.

**dermographism**

Induction of wheals by rubbing, scratching, or stroking the skin.

**desquamation**

A normal process in which the cornified layer of the epidermis is sloughed in fine scales.

**digitate**

Finger-like shape.

**discoïd**

Round, circular.

**disseminated**

Dispersed or spread widely throughout an organ or the whole body.

**dome shaped**

Hemispheric.

**dry gangrene**

Necrotic, usually black tissue, resulting from obstruction, diminution, or loss of blood supply. In dry gangrene, the affected area becomes cold, dry, and shriveled and eventually turns black.

**dyshidrotic**

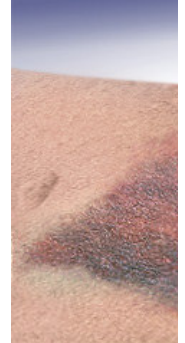
Pertaining to very small or deep-seated vesicles of the hands and feet.



[click image to enlarge image](#)

**E****ecchymosis**

Extravasation of blood into the mucous membrane or patches of discoloration over time may go from red to brown-yellow, or gray.



[click image to enlarge image](#)

**epidermal**

Relating to the superficial layer of the skin.

**eponychium**

The portion of the nail plate that is covered by the corneum over the nail bed.



erosion - flaccid

[AB](#)[Bu-C](#)[Cy-DE](#)[Er-F](#)[FI-GH](#)[IKL](#)[MN](#)[OP](#)[PI](#)[RS](#)[Si-T](#)[UV](#)[WZ](#)**erosion**

A localized loss of the epidermal or mucosal epithelium.



[click image to enlarge](#)

**erythroderma**

Generalized redness of the skin that may be associated with desquamation or extensive scaling.



[click image to view animation](#)

**excoriation**

A focal erosion usually due to scratching.



[click image to enlarge](#)

**exfoliative scale**

Peeling scale.

**extensor surface**

Pertaining to the skin of the muscles such as the extensors of the joints.

**exudative**

Weeping or oozing of fluids from tissue.

**F****fibrosis**

A proliferation of fibrous tissue.

**filiform**

Thread-like.

**fissure**

A linear crack or fissure in the skin usually found in thickened skin.

**fistula**

An abnormal passage from an internal organ to the body surface or between two internal organs.

**flat topped**

Evenly elevated as a plateau.

**flaccid**

Soft and flabby without tension.

**erythema**

Localized, blanchable redness of the skin or mucous membranes.



[click image to view animation](#)

**eschar**

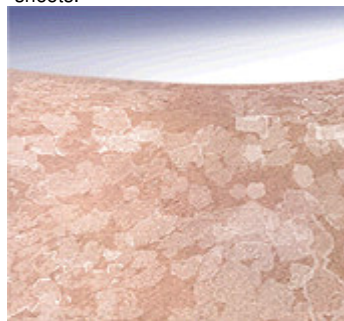
An adherent, thick, dry black crust.



[click image to enlarge](#)

**exfoliation**

Desquamation of the epidermis appearing as fine scaling or as peeling "sheets."



[click image to view animation](#)

flexural surface – hystrix-like scale

**AB****flexural surface**

Pertaining to the skin surface overlying muscles that flex joints, such as the biceps.

**Bu-C****Cy-DE****Er-F****fluctuant**

Movable and compressible.

**FI-GH****IKL****MN****OP****Pi****RS****Si-T****UV****WZ****follicular**

1. Pertaining to a follicular distribution: A regular pattern following the distribution of hair follicles.
2. Pertaining to a follicular localization: Pertaining to the hair follicles.

**fragile**

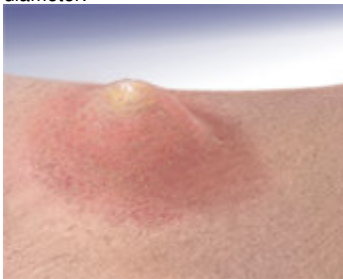
Easily broken.

**friable**

Easily crumbled.

**furuncle**

A follicle-centered nodule caused by a suppurative infection characterized by pain, redness, and potentially visible pus. Usually greater than 1 cm in diameter.



[click image to see animation](#)

**G****gangrene**

Necrotic, usually black tissue, resulting from obstruction, diminution, or loss of blood supply. Gangrene may be wet or dry.

**generalized**

Widespread, affecting many body regions.

**geographic**

Resembling the outlines of a map.

**geometric**

Geometric forms, e.g., circles or angular lines.

**glabrous areas**

Smooth skin devoid of terminal hairs.

**greasy scale**

Yellow-brown scale.

**grouped**

Clustered.



[click image to see animation](#)

**gumma**

A soft nodule or small tumor often having an ulcerated surface. Historically gumma has been used to describe the lesions of tertiary syphilis and tuberculosis.

**guttate**

Drop-like.

**gyrate**

Arranged in rings or convolutions.

**H****half-and-half nail**

Color change in the nail bed with distal portion red-brown and the proximal aspect paler white. Most frequently seen in chronic renal disease.

**halo**

A zone surrounding a central lesion, area, or object.

**hematoma**

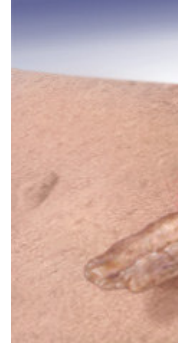
A collection of extravasated blood that is relatively or completely confined within a space. The blood is usually clotted (or partly clotted), and depending on time may manifest various degrees of organization and color.

**herpetiform**

Resembling the clusters or groups of lesions seen in herpes infections.

**horn**

An abnormally keratinized projection that is a



[click image to enlarge](#)

**hyperpigmented**

Darkening of the skin melanin.

**hyponychium**

The hyponychium is the area between the nail and the distal groove, where the nail detaches from the skin.

**hypopigmented**

Decreased skin pigmentation.

**hystrix-like scale**

Scale that appears Porcupine-like.

## ichthyosiform scale - lymphangitic

AB

Bu-C

Cy-DE

Er-F

FI-GH

IKL

MN

OP

Pi

RS

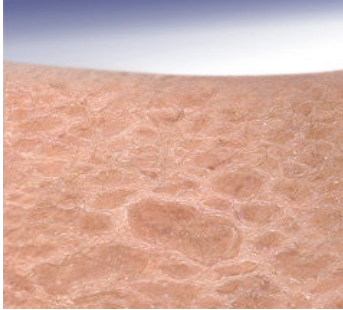
Si-T

UV

WZ

**I** \_\_\_\_\_

**ichthyosiform scale**  
Large polygonal scales, as in fish scales.



click image to enlarge

**imbricated**  
Resembling tiled roof.

**indurated**  
Hardening of the skin beneath the epidermis usually caused by edema, dermal-sclerosis, inflammation, or cellular infiltration.

**infarct**  
Area of necrosis resulting from lack of blood supply.

**inframammary**  
Area involving the skin folds below the breasts.

**intertriginous**  
Regions where opposing skin surfaces come in contact that may cause friction, e.g., axillae and inner thighs.

**iris**  
Concentric rings of various color shades.

**irregular**  
Not of regular or symmetrical form; unevenly shaped or placed.

**K** \_\_\_\_\_

**keloid**  
A firm, usually elevated, proliferation of scar tissue exceeding the area of the preceding skin injury or wound.



click image to view animation

**keratoderma**  
A diffuse, usually persistent, retention of stratum corneum producing a thick, waxy layer of yellow adherent keratin. Keratoderma typically involves the palms and soles.

**koilonychia**  
Concave and slightly spoon shaped nails.

**L** \_\_\_\_\_

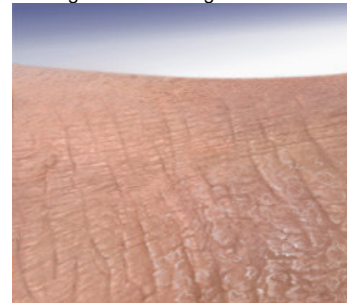
**lakes of pus**  
Coalescing areas of pus.

**lamellar scale**  
Plate-like scale.

**leading edge scale**  
Scale at the advancing edge of a plaque. Also called advancing edge scale.

**leukonychia**  
(true leukonychia)  
White coloration of the nail plate, either partial or total involvement.

**lichenification**  
Thickened skin with accentuated markings usually due to repeated rubbing and scratching of skin.



click image to enlarge

**linear**  
Resembling a strain.



click image to view

**localized**  
Process limited to the body.

**lunula**  
A crescent-shaped corresponding to the proximal nail.

**lymphangitic**  
Following the lymph.

## maceration - nummular

AB

Bu-C

Cy-DE

Er-F

Fl-GH

IKL

MN

OP

Pi

RS

Si-T

UV

WZ

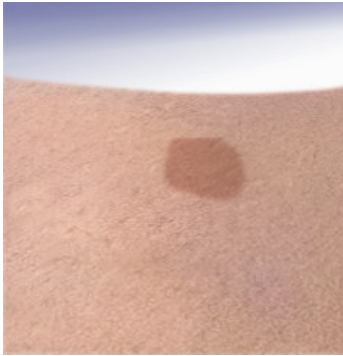
## M

**maceration**

Softened or broken down skin resulting from prolonged exposure to wetness causing whitening and thickening of the keratin sometimes with redness, oozing, and/or scaling.

**macule**

A flat, generally less than .5 cm area of skin or mucous membrane with different color from surrounding tissue. Macules may have non-palpable, fine scale.



[click image to view animation](#)

**madarosis**

A loss of the eyelashes or eyebrows.

**marginal scale**

See *trailing edge scale*.

**Mee's lines**

Transverse white line(s) in the nail plate that is non specific and can be seen with any severe systemic insult. They grow out with the nail plate. Often seen with arsenic ingestion.

**meniscus of pus**

Pus within a bulla often having a crescentic shape.

**micaceous scale**

Shiny, flat flakes resembling the mineral mica.

**milia**

Tiny white cysts, usually less than 2 mm, containing keratin.

**moniliform**

Resembling a string of beads.

**morbilliform**

Generalized, small erythematous macules and/or small papules resembling the rash of measles.

**mottled**

Marked with spots of different colors.

**Muehrcke lines**

Transverse white bands that are an abnormality of the nail bed and do not grow out with the nail. Muehrcke lines are commonly associated with hypoalbuminemia.

**multilocular**

Multiple chambers separated by septae.

## N

**nail bed**

Epithelium and dermis beneath nail plate extending from the nail matrix to the hyponychium.

**nail folds**

The folds of skin that overlap the nail at its proximal and lateral edges. The proximal nail folds consist of ventral and dorsal portions. The ventral portion of the proximal fold adheres to the nail plate and cannot be seen externally.

**nail matrix**

The nail matrix is the specialized anatomical unit that It extends from the proximal nail fold to the distal lunula. The nail matrix is responsible for nail plate formation.

**nail pitting**

Punctate depressions in the nail plate.

**nail plate**

The hard, fully keratinized structure commonly referred to as the nail.

**nail unit**

An anatomic location or unit consisting of the nail plate, nail bed, nail folds, and nail matrix.

**necrotic**

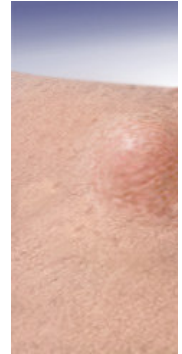
Pertaining to the death of tissue in response to disease.

**nodose**

Nodular.

**nodule**

A dermal or subcutaneous defined lesion usually 1-2 cm in diameter.



[click image to view animation](#)

**nuchal**

Pertaining to the nape of the neck.

**nummular**

Round to oval shaped lesion usually 2-3 cm in diameter



## onychchauxis - pincer nail

AB

Bu-C

Cy-DE

Er-F

FI-GH

IKL

MN

OP

Pi

RS

Si-T

UV

WZ

**O****onychchauxis**

A thickened nail plate.

**onychogryphosis**

(ram's horn nail)

Thickened, curved, often claw like overgrowth of fingernails or toenails.

**onychoheterotopia**

Ectopic nail plate.

**onycholysis**

Detachment or separation of the nail plate from its bed usually starting at the distal free end and typically having a white or opaque appearance.

**onychomadesis**

Detachment or shedding of the nail plate at the proximal nail fold.

**onychorrhaxis**

Longitudinal splitting or ridging of the nail plate.

**onychoschizia**

(fragility, brittle nails, fragile nails)

A distal, layered or lamellar splitting of the nail plate.

**P****papillomatous**

Papules or plaques with fine multiple surface projections.

**papule**

A discrete, solid, elevated body usually less than .5 cm in diameter. Papules are further classified by shape, size, color, and surface change.



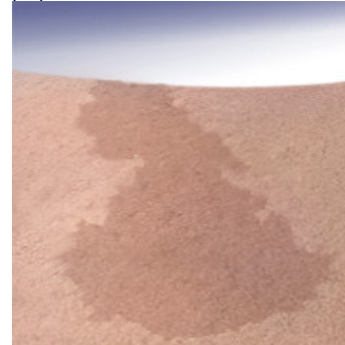
click image to view animation

**papulosquamous**

Raised and scaly.

**patch**

A flat, generally greater than .5 cm area of skin or mucous membranes with different color from surrounding tissue. Patches may have non-palpable, fine scale.



click image to view animation

**peau d'orange**

A plaque or swelling with follicular orifices obvious on the surface resembling an orange peel.

**pedunculated**

Connected by a stalk or pedicle.

**perifollicular**

Pertaining to an area around a follicle.

**periorificial**

Pertaining to the ar orifice or opening.

**periungual**

Pertaining to the ar fingernails or the to

**petechiae**

Tiny, 1-2 mm non-l macules resulting f hemorrhages.



click image to view

**photodistributer**

Pertaining to sun e

**pincer nail**

(trumpet nail)

Excessive transver of the nail plate, es portion.

pits - pustule

[AB](#)**pits**

Small, sharply demarcated depressions in the skin or nail surface.

[Bu-C](#)[Cy-DE](#)**pityriasiform scale**

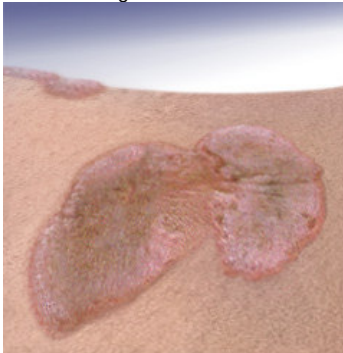
Delicate and fine scale.

[Er-F](#)[FI-GH](#)**plane**

A flat or level surface.

[IKL](#)**plaque**

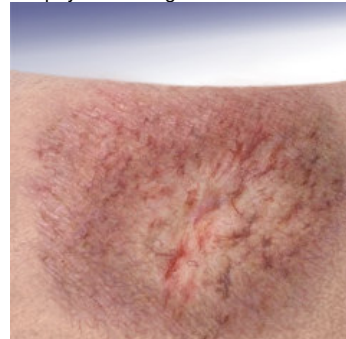
A discrete, solid, elevated body usually broader than it is thick measuring more than .5 cm in diameter. Plaques may be further classified by shape, size, color, and surface change.

[MN](#)[OP](#)[Pi](#)[RS](#)[SI-T](#)[UV](#)[WZ](#)

[click image to view animation](#)

**poikiloderma**

An area of variegated pigmentation, atrophy and telangiectasia.



[click image to enlarge](#)

**polycyclic**

Formed from coalescing circles, rings, or incomplete rings.



[click image to view animation](#)

**polygonal**

Having many sides.

**powdery**

Of the nature or consistence of powder or fine loose particles.

**pterygium**

Scar-like triangular extension of the proximal nail fold tissue and cuticle distally over the nail plate. The nail can become gradually eroded at this point and becomes divided with linear grooves and fragments.

**punched-out ulcer**

An ulcer with a sharply demarcated edge.

**punctate**

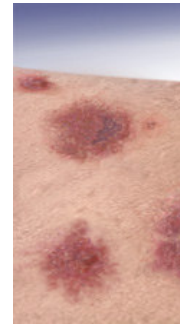
Dot-like.

**purpura**

Hemorrhage into skin or mucous membranes which varies in size and ranges in color related to duration. Types of purpura include palpable purpura, ecchymosis, and petechiae.

**purpura, palpab**

Raised and palpable or violaceous disc mucous membrane inflammation in the extravasation of re



[click image to view](#)

**purulent**

Producing or conta

**pustule**

A circumscribed el pus. Pustules are t in diameter.



[click image to view](#)



ragged - shiny

[AB](#)[Bu-C](#)[Cy-DE](#)[Er-F](#)[Fl-GH](#)[IKL](#)[MN](#)[OP](#)[Pi](#)[RS](#)[Si-T](#)[UV](#)[WZ](#)**R****ragged**

Having a broken jagged outline or surface.

**reniform**

Kidney shaped.

**reticular**

Net-like.

[click image to view animation](#)**rhinophyma**

Thickening, enlargement and sebaceous hyperplasia of nose.

**rolled border**

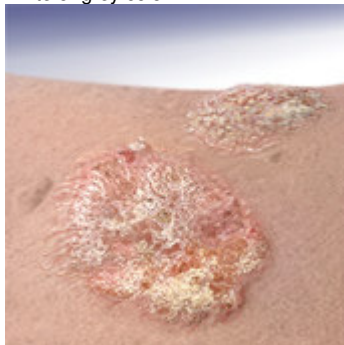
Curled or rounded edge.

**S****sanguineous**

Bloody.

**scale**

Excess stratum corneum accumulated in flakes or plates. Scale usually has a white or grey color.

[click image to enlarge](#)**scar**

Thickening or thinning of skin with fibrous tissue replacing normal tissue as a result of injury or disease. Scars are frequently depigmented.

**scarlitiniform**

Minute, often red, sandpaper-like papules.

**scattered**

Irregularly distributed.

[click image to view animation](#)**sclerosis**

Persistent circumscribed hardening or induration.

**scutular**

Shield-like.

**serous**

Yellow or straw color.

**serpiginous**

Snake-like or serpentine.

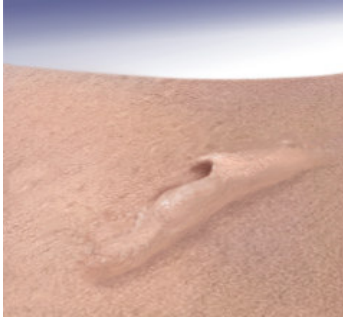
[click image to view animation](#)**shiny**

Having a reflective surface.

sinus - translucent

[AB](#)[Bu-C](#)[Cy-DE](#)[Er-F](#)[Fl-GH](#)[IKL](#)[MN](#)[OP](#)[Pi](#)[RS](#)[Si-T](#)[UV](#)[WZ](#)**sinus**

A channel or tract from a deep lesion to the surface. A sinus often permits escape of pus, fluid, or cyst contents.



[click image to view animation](#)

**sphacelus**

Gangrenous or necrotic.

**spherical**

Globe-like.

**splinter hemorrhages**

Dark-red, sometimes black thin longitudinal lines appearing to be within the nail plate or nail bed. The shape of the hemorrhages is due to the longitudinal orientation of nail bed capillaries.

**stellate**

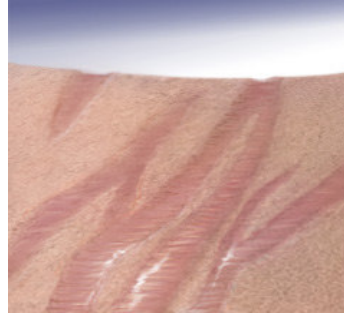
Star shaped.

**stratified**

Layered.

**striae**

A flat or atrophic, usually linear, area of skin that may vary in color from pink to red that eventually becomes hypopigmented.



[click image to enlarge](#)

**striated**

Striped.

**subcutaneous**

Below the dermis.

**suggillations**

Swollen black and blue marks that are often the consequence of bruising or other injury.

**symmetric**

1. Pertaining to an individual lesion: Equal shape from side to side. 2. Pertaining to a body distribution: Equal distribution of lesions on both sides of body.

**T****telangiectasia**

Visible, persistent, dilation of small, superficial cutaneous blood vessels.



[click image to view animation](#)

**targetoid**

Target-like; "bull's eye."



[click image to view animation](#)

**tense**

Taut, not compressible. Usually contains certain vesicles and

**Terry Nails**

An apparent leukonychia where the majority of the nail is white, with a normal pink or red band at the distal end. Most nails are affected. Frequently associated with chronic liver disease.

**trachyonychia**

(sandpapered nails) The nail plate has a rough, sandpapered appearance and an opaque surface.

**trailing edge scale**

Scale that forms at the advancing edge of a lesion, known as marginal scale.

**translucent**

Allowing the passage of light. Opaque.

ulcer - wheal

[AB](#)[Bu-C](#)[Cy-DE](#)[Er-F](#)[Fl-GH](#)[IKL](#)[MN](#)[OP](#)[Pi](#)[RS](#)[Si-T](#)[UV](#)[WZ](#)**U****ulcer**

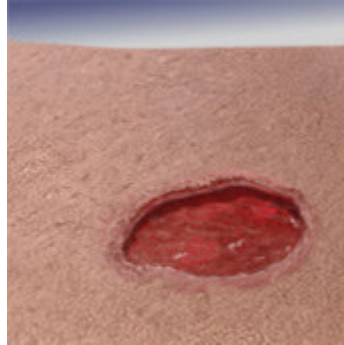
A circumscribed loss of the epidermis and at least upper dermis. Ulcers are further classified by their depth, border, shape, edge, and tissue at its base.


[click image to enlarge](#)
**umbilicated**

With a central indentation of the surface. Also known as delled.

**undermined edge**

The border of an ulcer having an excavated edge or periphery with intact overlying skin surface, but dermal and subcutaneous tissue loss.


[click image to view animation](#)
**unilateral**

Involving only one side.

**unilocular**

One chamber.

**urticarial**

See wheal.

**V****vegetation**

Multiple, closely packed, round, sometimes pointed or thread-like projections. Each projection is usually several millimeters in diameter.

**ventral pterygium**

(pterygium inversus unguis)

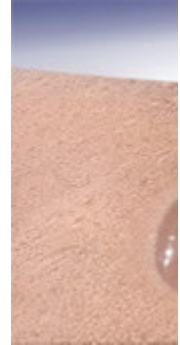
A distal extension of the hyponychial tissue that is anchored to the undersurface of the nail, thereby obliterating the distal groove.

**vibex**

A linear hemorrhage.

**vesicle**

A fluid filled cavity, less than .5 cm in diameter. Clear, serous, hemorrhagic, or bloody.


[click image to view](#)

weeping - zosteriform

[AB](#)[Bu-C](#)[Cy-DE](#)[Er-F](#)[Fl-GH](#)[IKL](#)[MN](#)[OP](#)[Pi](#)[RS](#)[Si-T](#)[UV](#)[WZ](#)**W****weeping**

Oozing or exuding fluid.

**wet gangrene**

Necrotic, usually black tissue, resulting from obstruction, diminution, or loss of blood supply. Wet gangrene often follows a crushing injury. It has an offensive odor and spreads rapidly.

**wheel**

An edematous, transitory papule or plaque having a ring of erythema known as a flare and surrounded often by a narrow peripheral zone of pallor or vasoconstriction.

Also known as *urticaria*.

click image to enlarge


**whorled**

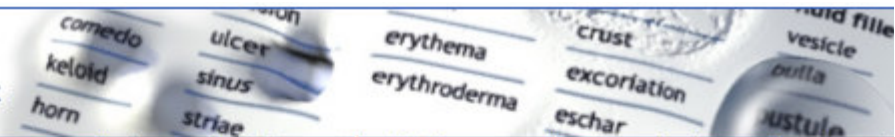
Stirred appearance.



click image to view animation

**Z****zosteriform**See *dermatomal*.





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**raised**

[papule](#)

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[wheal](#)

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[erosion](#)

[ulcer](#)

[sinus](#)

[striae](#)

[burrow](#)

[poikiloderma](#)

**flat/macular**

[macule](#)

[patch](#)

[erythema](#)

[erythroderma](#)

**surface change**

[scale](#)

[crust](#)

[excoriation](#)

[eschar](#)

[lichenification](#)

[exfoliation](#)

[ichthyosiform](#)

**fluid filled**

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**config**

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[target](#)

[whorle](#)

[arcuat](#)

[annula](#)

**INSTRUCTIONS**

Click the cursor on a **term** to view its  
lexicon. Click the cursor on the **lexicon**  
to view animations or illustrations

This page is dedicated to Dr. Irwin M. Freedberg; DLP consultant, esteemed teacher, and friend





the ability to perform reliable and consistent clinical research in dermatology hinges not only on the ability to accurately describe and codify diagnostic information, but also complex visual data. Visual patterns and images are at the core of dermatology education, research and practice. As we move into the next millennium, advances in digital imaging techniques and processing will deliver new and powerful methods to measure outcomes in clinical research. These new imaging and computing technologies will also facilitate remote diagnosis through telemedicine. Digital technology is also creating new opportunities to enhance medical education and care through digital image databases, computerized medical records and knowledge sources.

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## Project Overview

The ability to perform reliable and consistent clinical research in dermatology hinges not only on the ability to accurately describe and codify diagnostic information, but also complex visual data. Visual patterns and images are at the core of dermatology education, research and practice. As we move into the next millennium, advances in digital imaging techniques and processing will deliver new and powerful methods to measure outcomes in clinical research. These new imaging and computing technologies will also facilitate remote diagnosis through telemedicine. Digital technology is also creating new opportunities to enhance medical education and care through digital image databases, computerized medical records and knowledge sources.

To realize their full potential all these technologies will require a standard dermatology lexicon. With a universally accepted terminology it is difficult to conduct standardized multi-center research, build digital or shared image databases and create useful computerized medical records. Standardized terminology vocabularies are necessary for image acquisition, transmission, archiving, display and review within an integrated health network and academic research area.

## Mission

The creation of a universally accepted and comprehensive dermatology terminology to support dermatology research, medical informatics and clinical care with a blueprint for sustainability.

## Funding

This project has been funded in whole or in part with Federal funds from the National Institute of Arthritis, Musculoskeletal and Skin Diseases, National Institute of Health, Department of Health and Human Services and with Funds from The Carl J. Herzog Foundation, Inc. under Contract No. NO1-AR-1-2255.

## Please take our short survey



## Dermatology Lexicon Project Questionnaire

The members of the Dermatology Lexicon Project are in need of your feedback. Please answer the questions by clicking on the "Submit Form" button to submit your questionnaire.

1. What is your professional degree?

MD

2. What type of practice setting do you work in?

Private clinical practice

Other:

3. Which of the following do you currently do/use?

- ☐ Image indexing
- ☐ Literature searching
- ☐ Electronic medical records
- ☐ Utilize telemedicine
- ☐ Aggregate research data
- ☐ Medical education
- ☐ Clinical decision support systems

4. How would you apply the Dermatology Lexicon to your work?

- ☐ Image indexing
- ☐ Literature searching
- ☐ Electronic medical records
- ☐ Utilize telemedicine
- ☐ Aggregate research data
- ☐ Medical education
- ☐ Clinical decision support systems
- ☐ Other (specify)

Submit Form

Reset Form

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### Introduction

1. Why develop a dermatology lexicon and what positive impact might it have on the practice and science of dermatology?
2. How will a clinical vocabulary improve clinical care and workflow?
3. How will a standardized vocabulary enhance clinical research?
4. What areas of terminology does the DLP encompass?
5. What is concept oriented vocabulary and why is it important for dermatology to have one?
6. What is the difference between Preferred Terms and Synonyms?
7. How will the lexicon accommodate multiple users?
8. What is the relationship between the DLP and existing standards such as ICD (International Classification of Diseases) and CPT?
9. What other current efforts are in progress?
10. How will the DLP integrate with existing and future terminologies?
11. How will the dermatology community be involved with DLP?
12. How can I participate in the DLP?

### Introduction

Dermatology has a long-standing need for a standardized, comprehensive reference terminology to facilitate consistent and accurate communications. Dermatology, with its rich and complex lexicon, has a particularly difficult semantic and lexical problem. Terms often have a visual definition that is not easily translated textually and meanings are usually not agreed upon. In addition, the field of dermatology encompasses roughly 6,000 unique diagnostic concepts with overlapping definitions, intricate hierarchical relationships and varying clinical presentations. The relationships that link objective visual findings to patterns of disease have not been fully explored.

The modern history of nomenclature in dermatology dates to 1977 when Crawford Brown MD and a task force formed by the American Academy of Dermatology created SNODERM, which was an abstraction of the original SNOMED. One must recognize that affordable, high-speed computing was in its infancy. At the time no new terms were created by dermatologists for inclusion in this lexicon, and therefore the sub-set of terms derived from SNOMED was incomplete with little emphasis on morphology. In the past 24 years, modern computing and digital imaging have re-established the need for a comprehensive lexicon.



The University of Rochester was awarded a contract by the National Institute of Arthritis, Musculoskeletal and Skin Diseases (NIAMS) to oversee the creation of a comprehensive dermatology lexicon.

The Dermatology Lexicon Project (DLP) team includes:

**Principal Investigator:** *Art Papier, MD*, Associate Professor of Dermatology, University of Rochester School of Medicine and Dentistry.

**Co-Principal Investigator:** *Lowell A. Goldsmith, MD, MPH*, Dean Emeritus and Professor of Dermatology of the University of Rochester School of Medicine and Dentistry, Professor of Dermatology, University of North Carolina at Chapel Hill.

**Project Coordinator:** *Jennifer Byrnes, MLS*, University of Rochester Department of Dermatology

**Programmer:** *Egan Allen, MD*, Internal medicine private practice, Rochester, NY.

**Illustrator, Animator & Designer:** *Glen Hintz, MS*, Rochester Institute of Technology

### 1. Why develop a dermatology lexicon and what positive impact might it have on the practice and science of dermatology?

Medical lexicons, or controlled vocabularies, are essential to the efficient, reliable, reproducible communication of patient data and medical knowledge and affect all aspects of clinical care and research.

### 2. How will a controlled vocabulary improve clinical care and workflow?

Accurate and consistent medical record documentation.  
Improved communication and outcomes for telemedicine.  
Improved indexing and retrieval of literature and digital images.  
Automated assignment of diagnostic codes for billing.



### 3. How will a controlled vocabulary enhance clinical research activities?

Provide reliable terminology Support aggregation of data resulting in improved outcomes research. More consistent retrieval of patient and population based health information. Automate the process of disease prevalence and incidence reporting. Development of systematic data detection of medical error. Reduce costs associated with manual chart data abstraction

### 4. What is the scope of the DLP?

Dermatologic Diagnoses and their synonyms.  
Morphologic Terminology with textual and illustrated definitions.  
Therapies and procedures.  
Laboratory Tests.

### 5. What is concept oriented vocabulary and why is it important for dermatology to have one?

To be useful in computer terms, a word or groups of words that represent a specific entity cannot be ambiguous with more than one meaning and cannot be vague. As a simple example in the medical field, a computerized record may not identify the correct meaning of the word "cold," as this word can ambiguously mean "common cold" or refer to "cold temperature." "Diabetes" is vague in that it could mean Diabetes Insipidus or Diabetes Mellitus. Diagnostic concepts should be thought of as a standard. Consider if the aviation industry used regional and individual vocabularies when communicating between pilot and controller. Imagine the implications of four different terms describing direction on a runway. Similarly, physicians have just the same requirement for accuracy and precision. Therefore words must be defined as concepts with unique codes.



### 6. What is the difference between Preferred Terms and Synonyms?

Many terms can represent a concept. To simplify communication in the "human" dimension it is natural to choose a preferred term for a concept. The other terms then become synonyms. They will be recognized but are not suggested for use. For example, Hereditary Hemorrhagic Telangiectasia would be a preferred term; but while the eponym Osler-Weber-Rendu Syndrome is not preferred term a user could still map to the matching concept.

### 7. How will the lexicon accommodate multiple users?

In order to meet the needs of multiple users, the lexicon has varying degrees of granularity, which refers to the degree of specificity. There are many contexts that concepts can be used. For example, a primary care physician may only need to use the term "dermatitis" in their chart, whereas a dermatologist may use "allergic contact dermatitis due to methacrylate." Therefore, the level of granularity depends on the needs of the user.

### 8. What is the relationship between the DLP and existing standards such as ICD and CPT?

Examples of existing classification schemes include the International Classification of Disease (ICD), Current Procedural Terminology (CPT), Systematized Nomenclature of Medicine-Clinical Terms (SNOMED CT), Laboratory (LOINC), and Medical Entry Subject Headings (MESH) to name just a few. These classification schemes are inadequate to support dermatologic research as they were designed to fulfill particular needs, such as the financial transactions (CPT), bibliographic indexing and retrieval (MESH), exchange of laboratory data (LOINC) or for the purpose of computerized record keeping (SNOMED/READ). Additionally, these classification schemes were not created by dermatologists who have the expertise needed to accurately reflect the specialty. The DLP is working to map its term set to these classification schemes so that it may be integrated and compatible with these systems.



### 9. What other current efforts are in progress?

In the early 1990s the British Association of Dermatologists formally recognized the need for a new look at dermatological disease coding and secured a grant from the United Kingdom Department of Health to develop a comprehensive controlled vocabulary. A Working Group selected from interested members of the Association was formed and published the first edition of the British Association of Dermatologists Diagnostic Index in 1994. Furthermore, the Working Group devised a hierarchical structure that cross-mapped to ICD-10, which is required for all official administrative functions in the British National Health Service.

### 10. How will the DLP integrate with existing and future terminologies?

Computerized medical records, telemedicine applications and decision support systems contain vocabulary generic to all of medicine, not specifically dermatology. Therefore a dermatology lexicon must share common language (and codes) so that the dermatology terms relate to the vocabulary of medicine. The most comprehensive, universal clinical vocabulary is SNOMED. Perhaps the most significant advance in the creation of a universal, international terminology is the development of SNOMED Clinical Terms (SNOMED CT), launched in May of 2000 as a result of a joint initiative by the College of American Pathologists (CAP) and the British National Health Service Information Authority (NHSIA). SNOMED CT is an evolving international, multilingual terminology that is



designed to support clinical care and communication. It has been derived from amalgamating the vocabularies of SNOMED and Clinical Terms (Read Codes) classification systems which had been developed independently in the USA and in the United Kingdom. The CAP created SNOMED as a comprehensive reference terminology for medicine. SNOMED had been recognized by many as the most complete terminology available, but it has lacked a strong clinical lexical core. Hence, the joint venture with NHSIA to develop a more clinically relevant comprehensive term.

### **11. How will the dermatology community be involved with the Lexicon project?**

A lexicon is only useful if it meets the needs of the specialty it serves and requires the ongoing involvement of experts across a wide spectrum. The DLP has an advisory board consisting of experts in the field of medical informatics who provide feedback on the overall structure of the DLP. Also, dermatologists throughout the United States have participated in the DLP in a variety of ways. Our 12 consultants provide feedback on goals and objectives and assist in furthering our goals and objectives in the dermatology community. Dermatologists also serve as Expert Editors by drafting discrete sections of the Lexicon based on their area of expertise or review sections drafted internally.

### **12. How can I participate in the Dermatology Lexicon Project?**

Those interested in participating in the Dermatology Lexicon Project should contact Jennifer Byrnes at [jennifer\\_byrnes@urmc.rochester.edu](mailto:jennifer_byrnes@urmc.rochester.edu) or 585-275-0465.



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### Art Papier, MD

Principal Investigator, is an Associate Professor of Dermatology and Medical Informatics at the University of Rochester. At the University of Rochester Center For Future Health his work focuses on real-time reference systems for physicians and consumers concentrating on visually rich knowledge areas. He is particularly interested in computerized health records and decision support systems. Dr. Papier is Principal Investigator of the Dermatology Lexicon Project.

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### Lowell A. Goldsmith MD, MH

Co-Principal Investigator, is Dean and Professor Emeritus at the University of Rochester College of Medicine and Dentistry, and Professor of Dermatology at the University of North Carolina at Chapel Hill. In addition to editing the *Journal of Investigative Dermatology*, Dr. Goldsmith serves on the Board of Directors of the American Dermatology Association and is an editor of the definitive text, *Dermatology in General Medicine*.

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### Jennifer Byrnes, MLS

Project Coordinator, is a graduate of the University at Buffalo's School of Informatics. Ms. Byrnes has significant experience in the fields of medical education and consumer health information. She is also a graduate student in the department of Community and Preventive Medicine at the University of Rochester School of Medicine and Dentistry.

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585-275-0465



### Egan Allen, MD

Programmer, is an Internist with medical informatics expertise in computer programming and the information needs of physicians. He leads the database design and management of the project.



### Glen Hintz, MS

Medical Illustrator, is an Associate Professor and former Chairman of the Fine Arts Department at the Rochester Institute of Technology. Mr. Hintz specializes in medical illustration and animation using traditional, as well as, 2D and 3D computer media. He designed, illustrated, and animated the DLP web site.

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**Robert Chalmers, MD, FRCP**, University of Manchester School of Medicine, Manchester, UK

**James J. Cimino, MD**, Columbia University

**Peter L. Elkin, MD**, Mayo Clinic - Rochester

**Randolph A. Miller, MD**, Vanderbilt University

**Stuart Nelson, MD**, National Library of Medicine

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**Bernard Cohen, MD**, Johns Hopkins University  
**C. Ralph Daniel III, MD**, University of Mississippi  
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**Elise Olsen, MD**, Duke University  
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**Kim B. Yancey, MD**, Medical College of Wisconsin



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### Lexical/Medical Informatics

[American Medical Informatics Association \(AMIA\)](#)  
[American Society for Information Science & Technology](#)  
[British Medical Informatics Society](#)  
[Columbia University Department of Medical Informatics](#)  
[DermIS](#)  
[Digital Imaging and Communications in Medicine \(DICOM\)](#)  
[Duke Clinical Informatics](#)  
[Hardin Meta Directory: Medical Informatics](#)  
[Health Informatics World Wide](#)  
[Health Level 7 \(HL7\)](#)  
[ICD-9-CM](#)  
[ICD-10](#)  
[Journal of the American Medical Informatics Association \(JAMIA\)](#)  
[Manchester University Medical Informatics Group](#)  
[MIDAS Consortium](#)  
[SNOMED](#)  
[Stanford Medical Informatics](#)  
[Unified Medical Language System \(UMLS\)](#)  
[University of Pittsburgh Center for Biomedical Informatics](#)  
[Yale Center for Medical Informatics](#)  
[Biohealthmatics](#)

### Research

[Archives of Dermatology](#)  
[Botanical Dermatology Database](#)  
[Centers for Disease Control and Prevention](#)  
[Dermatlas](#)  
[DermReview](#)  
[Dermatology Online Journal](#)  
[DermWeb](#)  
[Electronic Textbook of Dermatology](#)  
[eMedicine: Dermatology](#)  
[Environmental Dermatology](#)  
[Journal of Investigative Dermatology](#)  
[National Center for Biotechnology Information](#)  
[National Institute of Arthritis and Musculoskeletal and Skin Diseases](#)  
[Sulzberger Institute](#)  
[University of Iowa Department of Dermatology](#)

### Professional Organizations

[American Academy of Dermatology](#)  
[American Board of Dermatology](#)  
[American Dermatology Association](#)  
[British Association of Dermatology](#)  
[Canadian Dermatology Association](#)  
[Dermatology Nurses Association](#)  
[Society for Investigative Dermatology](#)  
[Society for Medical Decision Making](#)

### Patient Information

[AAD AcneNet](#)  
[AAD Actinic Keratoses Net](#)

[AAD Aging Skin Net](#)  
[AAD EczemaNet](#)  
[AAD PsoriasisNet](#)  
[MedlinePLUS: Skin, Hair and Nails](#)  
[Stanford Health Library: Skin Diseases](#)